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ScienceDirect

Procedia Social and Behavioral Sciences 5 (2010) 1400–1408

Procedia Social and Behavioral Sciences

WCPCG-2010

Exploring factor structure of the dysfunctional attitudes scale

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Received January 17, 2010; revised February 6, 2010; accepted March 9, 2010

Abstract

The Dysfunctional Attitude Scale (DAS) was designed to measure patterns of maladaptive thinking held by depressed individuals. Despite its wide use as a research and clinical tool, only a few studies have been carried out to examine its psychometric properties in a high school student population in Iran. The objective of this study was to validate the Iranian version of the Dysfunctional Attitudes Scale Form A in the context of Iranian students. A total of 522 Iranian students (275 females and 225 males) from high schools participated in the study. Participants completed a General Health Questionnaire (GHQ) and an Automatic Thought Questionnaire (ATQ). Exploratory factor analysis, reliability analyses and confirmatory factor analysis were undertaken to assess the psychometric properties and validation of the DAS. Exploratory factor analyses showed a four-factor model of dysfunctional attitude scale. The fit of the proposed four-factor model was not promising. The internal consistency of the DAS (40 items) was reasonable (Cronbach's α = 0.72).The DAS correlated with the GHQ (r = 0.28) and the ATQ (r = 0.35). The results of exploratory factor analyses fairly supported the four-factor framework with Iranian students; however, confirmatory factor analysis was not fit with the model. Implications are discussed in detail.

Keywords: Dysfunctional Attitudes Scale; Reliability; Validity; Factor structure

1. Introduction

One of the approaches to explain emotional disorders is cognitive approach. In this approach, the individuals with particular difficulties represent and process their world and experiences in a special way. Beck (1987) proposed that dysfunctional attitudes (schemata) are vulnerability factors which play a causal role in the onset of depression. In Beck's theory, negative self schemas which include irrational or dysfunctional beliefs are core of vulnerability to depression. Childhood experiences along with a negative stressor increase the risk for depression in those individuals with maladaptive cognitive patterns (Beck, Rush, Shaw & Emery, 1979).The result of some studies done in this field has showed that there is such a pattern in adolescents (e.g. Hammen, 1992); thus, adolescence seems to be a particularly important stage of life to investigate these processes.

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doi:10.1016/j.sbspro.2010.07.296

There is a consensus among researchers that the prevalence of depression increases in adolescence. For example, Lewinsohn, Duncan, Stanton and Hautzinger (1986) found that the risk for developing an initial episode of unipolar depression increases during adolescence. Lewinsohn, Rohde, Seeley & Hops (1991) reported that the lifetime prevalence of depressive disorders was 20%. In Iran, Shojaezadeh and Rasafiani (2000) reported that the prevalence of depression with high school students was 43% in Kazeron city in Iran. Monirpoor, Yazdandoost, Atefvahid, Delavar, and Khosfi (2004) reported that prevalence of depression with high school students was 71% in Shahre'Ray area in Iran. In general, these findings suggest that the rate of depressive symptomatology in high school students is very high. Since schemata are vulnerability factors which play a key role in the onset of depression; it is necessary to validate an instrument for prognosis of depression.

Schemata are measured with the Dysfunctional Attitudes Scale (DAS; Weissman, 1979; Weissman & Beck, 1978). The Dysfunctional Attitudes Scale (DAS; Weissman, 1980; Weissman & Beck, 1978) is a self-report inventory designed to measure attitudes that can apt a person to depression. DAS was originally a 100-item scale developed using a college student population. It was divided into two parallel forms, 40-item forms A and B. The DAS Form A (DAS-A) has been widely used in depression research, particularly in testing the cognitive theory of depression (Whisman, 1993). Items were rated on a seven-point scale, ranging from totally agree (1) to totally disagree (7). Total scores can range from 40 to 280, with higher scores indicating greater grace of negative beliefs.

The original English version of this scale was found to have satisfactory reliability coefficients and could discriminate significantly between depressed and non-depressed groups. Additional studies have further supported the adequacy of this scale in terms of internal consistency and validity among college students (Dobson & Breiter, 1983; Weissman, 1980; Weissman & Beck, 1978; Brown, Hamme, Craske, & Wickens, 1995; Cane, Olinger, Gotlib, & Kuiper, 1986; Fresco, Heimberg, Abramowitz and Bertram, 2006; Haeffel, Abramson, Voelz, Metalsky, Halberstadt, Dykman, and et al., 2005; Sahin and Sahin, 1992; Hankin, Abramson, Miller and Haeffel, 2004). Also some researchers supported its adequacy in terms of internal consistency and validity among adolescents (Kauth & Zettle, 1990; Roberts & Gamble, 2001). In another study, D'Alessandro & Burton, (2006) supported its adequacy among children. Another group of researchers tested and supported its consistency and validity among psychiatric population (Gotlib, 1984; Seligman, Schulman, DeRubeis, Hollon, 1999; Hamilton & Abramson, 1983; Ilardi & Craighead, 1999; Joiner, Metalsky, Lew, & Klocek, 1999 and Chioqueta and Stiles, 2004). In another study De Graaf, Roelofs, and Huibers (2009) supported the adequacy of this scale on general population.

It was found that English version of DAS to have a good reliability and validity coefficient, and could discriminate significantly between depressed and non-depressed groups. Additional studies have supported the adequacy of this scale in terms of internal consistency and validity among college students (Dobson & Breiter, 1983; Weissman, 1980; Weissman & Beck, 1978; Brown, Hammen, Craske, & Wickens, 1995; Cane, Olinger, Gotlib, & Kuiper, 1986; Fresco, Heimberg, Abramowitz and Bertram, 2006; Haeffel, Abramson, Voelz, Metalsky, Halberstadt, Dykman, and et al., 2005; Sahin and Sahin, 1992; Hankin, Abramson, Miller and Haeffel, 2004). Also some researchers supported its adequacy in terms of internal consistency and validity among adolescents (Kauth & Zettle, 1990; Roberts & Gamble, 2001). In another study, D'Alessandro & Burton (2006) supported its adequacy among children. Another group of researchers tested and supported its consistency and validity among psychiatric population (Gotlib, 1984; Seligman, Schulman, DeRubeis, Hollon, 1999; Hamilton & Abramson, 1983; Ilardi & Craighead, 1999; Joiner, Metalsky, Lew, & Klocek, 1999 and Chioqueta and Stiles, 2004). In another study, De Graaf, Roelofs, and Huibers (2009) supported the adequacy of this scale on general population.

On the other hand, the factor structure of the DAS has been reported with several factors in several studies. The factor structure of the DAS consisting of two factors (Imber, Pilkonis, Sotsky, Elkin, Watkins, Collins, & et al, 1990; Cane & et al., 1986; Klocek, Oliver & Ross, 1997; Whisman & Fridman, 1998; and de Graaf, & et al, 2009), three factors (Power, Katz, McGuffin, Lam, & Beck, 1994; Beck, Brown, Steer, Weissman, 1991), and four factors (Parker, Bradshaw, & Blinnault, 1984; Sahin & Sahin, 1992) have been reported. Now the question that rises here is that why there are several factors in DAS! Is it related to various samples in different cultures or the underlying construct that DAS is measured by? It seems that that there is one serious problem in literature of DAS that is dividing many items of DAS in several factor analyses. For example, Imber and et al. (1990) gained a two-factor solution with 26 items, Cane and et al. (1986) reported a two-factor solution with 25 items, and Power & et al (1994) showed a three-factor solution with 24 items. Recently, De Graaf , & et al (2009) showed a two-factor solution with 17 items. In addition, the factors gained from several studies do not have mean unity. For example, when the results

of de Graaf, and et al (2009) are compared with Imber and et al. (1990), there is confusion that what the items 19, 27, 28, 32, 34 and 38 are measuring!!? Do they measure "Dependency" as claimed by de Graaf and et al or "need of approval" as claimed by Imber and et al? In general, it does not seem that DAS is a good scale. No study showed all of items of DAS to contribute in validity of DAS. Now the question that rises here is why no study showed all of items of DAS to contribute in validity of DAS? Perhaps, items were unrelated, or the construct was unclear or unrelated.

In Iran, no previous study has been reported examining the psychometric properties of an Iranian version of the DAS on high school students. Therefore, the purpose of the present study is to investigate reliability, validity and the factor structure of DAS in high school students. Since the current study is on the high school students, it is assumed that the structure model would be between two to four factors.

2. Method

2.1. Participants and Procedure

Participants in this study were 522 high school students from the Semnan (275 females, 225 males). They were from sixth (35%), seventh (34.2%) and eight (30.8%) grades. The stratified sampling method was used to select. At first, sampling proportion was calculated on the bases of different grades and genders. The proportions for grades of six to eight in females were .42, .29, and .29 and for males were .47, .27 and .26 respectively. In this regard, number of students who were recruited from grades sixth to eight in females were 113, 81, and 81 and in males 106, 61, and 58 respectively. Trained assistants administered all the instruments. They rechecked each of the questionnaires to make sure that they answered all the items. The scales were administered in groups and the time for the completion of all of them was 55 minutes on the average

2.2. Instruments

In addition to the DAS, participants completed several additional measures, two of which are relevant to this study: the ATQ-60 and the GHQ-28.

Persian Version of the Automatic Thoughts Questionnaire (PATQ-60; Hollon & Kendall, 1980, Ingram & Wisnicki, 1988; Talepasand, 1996) is a 60-item self-report instrument that measures the frequency of occurrence of negative and positive automatic thoughts, or self-statements. Each item represents a thought and respondents rate the frequency of occurrence of this thought, or a similar thought, within the past weeks. Occurrence frequency is rated on a 4-point scale[2] ranging from 1 (not at all) to 4 (all the time). Scores range from 60 to 240. Reliability and validity of the PATQ have been examined in numerous studies and are high enough (Talepasand, 1996). In this study, internal consistency of the PATQ (60 items) was Cronbach's $\alpha = 0.94$.

The General Health Questionnaire 28 (GHQ-28) is a 28-item measure of emotional distress in medical settings, which is divided into four subscales: somatic symptoms (items 1–7); anxiety/insomnia (items 8–14); social dysfunction (items 15–21); and severe depression (items 22–28) (Goldberg, 1978). The total score can be used as a measure of psychological distress. Persian Version of The General Health Questionnaire (PGHQ-28) was used in this study. In this study, internal consistency of the PGHQ was divided into four subscales: somatic symptoms, anxiety/insomnia, social dysfunction and severe depression. Their consistency were .69, .70, .64 and .82, respectively. The total score was used as a measure of psychological distress.

3. Results

2 In original version, 5-point scale ranging from 1 to 5 has been used.

3.1. Reliability

The analyses of the total sample (*n* =522) yielded a Cronbach's alpha of 0.72. In general, reliability estimate was acceptable indicating reasonable internal consistency. All corrected item-total correlations ranged between r = 0.03 ("Happiness is more a matter of my attitude towards myself than the way other people feel about me" and " Being isolated from others is bound to lead to unhappiness") and r = 0.49 ("I cannot be happy unless most people I know admire me").These correlations were weak compared to moderate levels.

3.2. Convergent Validity

As evidence of the convergent validity, Pearson correlation coefficients were computed with a measure of Persian Version of the Automatic Thoughts Questionnaire (PATQ) and another measure of Persian Version of the General Health Questionnaire (PGHQ) on the total sample. The results are displayed in Table 1. All the correlations were positive and significant.

3.3. Exploratory factor analyses

In keeping with the analyses reported in the literature, initially exploratory factor analyses of all 40 items of the DAS-A was conducted. It began with a principle axis factoring to assess the number of the factors in the DAS-A. In this analysis 14 factors emerged with eigenvalues greater than 1.0. However, inspection of the scree plot suggested one large initial component (lambda 4.745, percentage of total variance explained 11.86%) followed by a series of smaller components (e.g., component 2 lambda 3.08, 7.7%; component 3 lambda 2.17, 5.4%; component 4 Lambda 1.62, 4.1%, and etc.). Half of the DAS-A, items all loaded positively on the first unrotated principle factor (loaded more than 0.2). On the whole, the scree plot suggested that two-to four-factor solutions were reasonable. Thus, a series of iterative principle axis factor analyses were used to extract two-, three-, and four-factor solutions. Next, a VARIMAX orthogonal rotation to simplify structure was used prior to interpretation.

For the two-factor solution, most of the highest loading items on the first factor were from the original perfectionism scale, though only 8 of the 15 items from the perfectionism scale loaded more highly on factor one than factor two. Factor two was comprised of eight of the original social approval items and 11 items that were originally on neither scale.

Table 1.Means, standard deviations, and correlations among the various measures for the total sample of (n = 522)

variable	***M***	***SD***	***PATQ***	***PGHQ***	***somatic symptoms***	***Anxiety /insomnia***	***social dysfunction***	***severe depression***
1. DAS	156	20.6	0.35	0.28	0.19	0.23	0.20	0.20
2. PATQ	115.2	25.6		0.64	0.47	0.47	0.47	0.61
3. PGHQ	52.4	11.9			0.76	0.82	0.73	0.85
4. somatic symptoms	12.1	3.4				0.55	0.39	0.53
5. anxiety/insomnia	13.4	3.7					0.47	0.58
6. social dysfunction	14.3	3.4						0.49
7. severe depression	12.7	4.6						-

All correlations are significant at the 0.01 level.

For the three-factor solution, factor one still emerged as a perfectionism factor, five of the original items (4 and 20-23) loaded more on social approval and three items (16, 29 and 36) loaded on perfectionism that did not emerge

in prior studies. Factor two was closer to matching social approval in this solution, seven items (12, 18, 20, 21, 23, 25 and 31) loaded on social approval that did not appear in prior studies. Factor three emerged as an autonomy factor. The three highest loading items on this factor were autonomy items (24, 35 and 2).

The four-factor solution is shown in Table 2. In this solution, factor one emerged as perfectionism factor; most items loaded on this factor correctly. Three items (12, 29 and 36) loaded on perfectionism that did not load in prior studies. Factor two was closer to matching social approval in this solution, four of the original items (7, 19, 32 and 38) only loaded more on this factor, six items (5, 18, 31, 21, 20 and 33) loaded on social approval that were not so in prior studies. Factor three emerged as a dependency factor. The three highest loading items on this factor were dependency items (28, 27 and 40); the items 22, 23, 25 and 39 loaded on this factor that related with dependency. Factor four emerged as an autonomy (self control) factor. The three highest loading items on this factor were autonomy items (24, 35 and 2) and items 34, 37, 30 and 6 were loaded on this factor. Item 17 loaded on this factor weakly.

TABLE2. DAS-A four-factor rotated solution with high school students

	Factor Loadings			
Item	***1***	***2***	***3***	***4***
Das11	*.697*	.040	-.006	.040
Das10	*.671*	.088	.001	.018
Das13	*.625*	-.003	.025	.132
Das09	*.564*	.184	.024	.059
Das08	*.528*	.021	-.099	.106
Das26	*.457*	.140	-.085	-.170
Das16	*.426*	.126	.186	.169
Das36	*.402*	.108	-.255	-.020
Das29	*-.394*	-.202	.228	.037
Das15	*.379*	.095	.186	.095
Das14	*.334*	.162	.134	-.120
Das12	*.321*	-.267	-.059	.169
Das01	*.248*	.200	.137	-.070
Das19	-.035	*.465*	.111	.164
Das07	.343	*.456*	.162	.140
Das05	.180	*.399*	-.026	-.018
Das03	.224	*.392*	-.006	-.030
Das18	-.060	*.388*	.083	-.073
Das31	.092	*.345*	.125	.011
Das04	.238	*.343*	.195	-.103
Das21	.165	*.314*	.112	-.046
Das38	-.134	*.297*	.291	.223
Das20	-.081	*.289*	.281	-.113
Das32	.062	*.237*	.168	.099
Das33	.093	*.209*	.034	-022
Das28	.033	.062	*.452*	.072
Das27	.066	.092	*.436*	.003
Das40	-.177	.013	*.397*	.388
Das23	-.029	.047	*.345*	-023
Das22	.080	.161	*.342*	-.036
Das39	-.262	.119	*.317*	.079
Das25	-.044	.240	*.306*	-.012
Das17	-.112	-.090	-.162	.110
Das24	.133	.009	-.123	*.568*
Das35	-.016	.044	-.147	*.492*
Das02	-.065	-.050	-.070	*.436*
Das34	.097	.296	-.048	*.333*
Das37	.038	-.049	.094	*.246*
Das30	.022	-.036	.078	*.169*
Das06	.095	.063	.083	*.152*

To summarize, the exploratory factor analyses indicated that a two-factor, three-factor or four-factor solution would be acceptable. Although the four factor solution explained more variance [21% (four) versus 19% (three) and 15% (two)], neither solution explained much of the total variance in the sample.

3.4. Item analysis of the four- factor solution

It evaluated the internal consistency (coefficient alpha) and corrected item-to-total correlations for the perfectionism, social approval, dependency and autonomy scales as well as a total scores based on the items of these scales. Coefficient alpha for the 13 items on the perfectionism scale was 0.69. All the corrected item-total correlations were acceptable. All corrected item-total correlations ranged between r = 0.19 and r = 0.58, with the exception of item 29. Coefficient alpha for the 12 items on the social approval scale was 0.64, and all of the items had acceptable corrected item-to-total correlations. Coefficient alpha for the 7 items on the dependency scale was 0.57, and for the 8 items on the autonomy scale was 0.42. For all of the four factors, internal consistency was low. To assess the legitimacy of keeping these scales separate, the structure of the inter-item correlations was modeled using confirmatory factor analyses.

3.5. Confirmatory factor analyses

All CFA's were performed using LISREL 8.54 (Joreskog & Sorbom, 1993). Upon consideration of univariate and multivariate kurtosis, maximum likelihood estimation (ML) with adjustments for non-normality was employed. Three fit indices were used to assess model fit: the root mean square error of approximation (RMSEA), the standardized root mean square residual (SRMR), and the comparative fit index (CFI).

A four factor model was tested for explaining the pattern of correlations among the 40 items that make up the perfectionism, social approval, dependency, and autonomy scales. Both an independent and correlated four-factor model was tested. Finally, based on the results of these and other analyses, the scales were refined by eliminating some problematic items and re-evaluated the structure.

Table 3 presents the fit indices for a four factor model (initial structure). The fit statistics did not suggest close fit. The DAS items were examined in order to diagnose possible reasons for misfit. An examination of the standardized covariance residuals from the four-factor model indicated that items 1, 3, 7, 12, 17, 20, 25, 29, 34, 38 and 40 were the problematic items. Thus, the scales were refined by eliminating problematic items and the structure was re-evaluated (revised structure).

Table3 Fit statistics for the various hypothesized four – factor models from sample (N=522)

Model	**X^2**	**df**	**CFI**	**RMSEA**	**RMSEA**	**SRMR**
					90% confidence interval	
Initial structure						
Correlated factors	2577.48	696	0.56	0.072	0.069-0.075	0.083
Independent factors	2704.95	702	0.52	0.074	0.071-0.077	0.099
Revised Structure						
Correlated factors	826.32	371	0.76	0.049	0.044-0.053	0.061
Independent factors	909.65	377	0.73	0.052	0.048-0.056	0.075

3.6. Four correlated factors on the revised set of 29 items

The four correlated factors model on this revised item set provided a significant improvement over the independence model. The chi-square for this independence model was 909.65 with 377 df. The Satorra - Bentler scaled chi-square for the four-correlated factor model was 826.32 with 371 df. The comparative fit index (CFI=0.76) was not close to be marginally acceptable. The point estimate of RMSEA was below 0.049 and the upper confidence limit was 0.053 suggested by Browne & Cudeck (1993). The P-value for test of close fit was 0.73. The SRMR (0.061) was acceptable. However, the model was not fit; thus some items that were loaded on more than one factor were eliminated. For example, items 36, 16 and 26 from perfectionism; items 4, 21, 32, and 33 from social approval; items 39 from dependency and, 6 and 30 items from autonomy were eliminated. The Satorra-Bentler scaled chi-square for the four-correlated factor model was 267.23 with 149 df. The comparative fit index (CFI=0.9) was close to marginally acceptable. The point estimate of RMSEA was below 0.031 and the upper confidence limit was the value 0.047. The P-value for test of close fit was 0.99. The SRMR (0.053) was acceptable. This model with set of 19 items was not fit.

Table 4 includes standardized path coefficients, error terms, and variance explained (R^2) in the individual items by the factors for the 19 item DAS-A. The findings indicated that the fit of the model was not supported; there were a number of items for which half of their variance was unexplained.

Table 4 Fit Indices and standardized parameter estimates DAS- A

Abbreviated 19-item DAS-A						
Model	**X^2**	**df**	**CFI**	**RMSEA**	**RMSEA 90% confidence interval**	**SRMR**
Four-factor	267.23	149	0.9	0.039	0.031-0.047	0.053
Items	**Path Coefficients**		**Error Variance**		**R^2Value**	
Perfectionism						
11	.71		.49		.51	
10	.75		.44		.56	
13	.56		.69		.31	
8	.58		.66		.34	
9	.66		.56		.44	
14	.32		.90		.10	
15	.40		.84		.16	
Social approval						
19	.32		.90		.10	
5	.53		.72		.28	
18	.33		.89		.11	
31	.54		.71		.29	
Dependency						
28	.55		.69		.31	
27	.51		.73		.27	
23	.30		.91		.09	
22	.25		.94		.06	
Autonomy						
24	.61		.63		.37	
35	.47		.78		.22	
37	.13		.98		.02	
2	.46		.79		.21	

4. Discussion

Overall, the results of this study fairly support the reliability, and convergent validity of the DAS-A. But, they don't support the construct validity of DAS. The DAS-A was fairly acceptable as an internally consistent. Convergent validity analyses indicated that the DAS-A was significantly correlated with both the PGHQ and PATQ. This demonstrates that the DAS-A is indeed measuring a trait that is associated with automatic thoughts and general health in high school students. Exploratory factor analysis indicated that a four-factor solution is acceptable although two factors didn't show an internally consistency. However, the factor structure of the DAS-A appears to be different with high school students. Confirmatory factor analysis showed that the original factors, even with some poor items deleted, do not match the latent structure in this sample. These findings are not consistent with results found by Imber et al, (1990), Cane et al., (1986), klocek et al, (1997), Whisman & Fridman(1998), de Graaf, Roelofs and Huibers (2009), Power et al, (1994), Beck et al, (1991), Parker et al, (1984), Sahin & Sahin, (1992).

Another difference is the large amount of variance left unexplained by the factors in the sample consisting of high school student. With a sample of younger adults, Cane et al (1986) found that 61% of the variance was explained by a two-factor model, whereas; in our sample of students only 21% of the variance was explained even with a four-factor model. One explanation for this is that the DAS- A items are not tapping the latent variables, or perhaps the construct is unclear.

Another explanation is that there is more diversity amongst high school students than depressed younger adults and that dysfunctional thinking is prominent for only a subset of high school students.

Many items of DAS in pervious research were removed. Now, here these questions rise: What is core problem of DAS? Was the construct of dysfunctional attitudes defined appropriately? Were items designed correctly? These are the questions that strike the mind by considering the result of the previous studies and current results. In this study, there was less evidence for the questions. However, there were some favorable psychometric properties with the student sample. Internal consistency was acceptable for first two- factor, which is 'perfectionism' and 'dependency'.

It is critical to identify and correctly interpret the meaning of the DAS-A factors in high school students. In order to be considered meaningful, the latent variables should be consistent with the theoretical basis of the instrument. In the case of younger adults, prior research using factor analysis has yielded two constructs (perfectionism and need for social approval) that are theoretically consistent with the experience of depression. Of course it should be noted that many items deleted in the studies. These two factors also explain the majority of the variance, suggesting that these are the dominant issues measured by the DAS- A in younger adults. Of course, in the student sample, the factor analyses didn't yield a factor model clearly. This suggests that either the latent variables are different from perfectionism and social approval, or that there are different characters in high school students in Iran. Without a clear pattern to the items in the factors, it is difficult to speculate about the nature of the latent variables. Taken together, the data suggest that the DAS-A should not be used with high school students.

References

Beck, A. T. (1987). Cognitive models of Depression. *Journal of Cognitive Psychotherapy: An International Quarterly*, 1, 5-37.

Beck, A. T., Brown, G., Steer, R. A., Weissman, A. N. (1991). Factor analysis of the Dysfunctional Attitude Scale in a clinical population. *Psychological Assessment,* 3, 478-483.

Beck, A. T., Rush, A. J., Shaw, B. F., & Emery, G. (1979). *Cognitive therapy of depression*. New York: Guilford Press.

Brown, G. P., Hammen, C. L., Craske, M. G., & Wickens, T. D. (1995). Dimensions of dysfunctional attitudes as vulnerabilitiess to depressive symptoms. *Journal of Abnormal Psychology*, 104, 431-435.

Browne, M., & Cudeck, R. (1993). Alternative ways of testing model fit. In K. Bollen & J. Long (Eds.), *Testing Structural Equation Models* (pp.136–162). Newbury Park, CA: Sage.

Cane, D. B., Olinger, J., Gotlib, I. H., & Kuiper, N. A. (1986). Factor structure of the Dysfunctional Attitude Scale in a student population. *Journal of Clinical Psychology*, 42, 307-309.

Chioqueta, A. P., & Stiles, T. C. (2004). Psychometric properties of the Norwegian version of the Dysfunctional Attitude Scale (Form A). *Cognitive Behavior Therapy*, 33, 83-86.

D'Alessandro, D. U., & Burton, K. D. (2006). Development and validation of the Dysfunctional Attitudes Scale for children: Tests of Beck's cognitive diathesis-stress theory of depression, of its causal mediation component, and of developmental effects. *Cognitive Therapy and Research*, 30, 335–353.

De Graaf, L. E., Roelofs, J., & Huibers, M. J .H. (2009). Measuring dysfunctional attitudes in the general population: The Dysfunctional Attitude Scale (form A) revised. *Cognitive Therapy and Research,* 33: 345–355.

Dobson, K. S., & Breiter, H. J. (1983). Cognitive assessment of depression: Reliability and validity of three measures. *Journal of Abnormal Psychology*, 92, 107–109.

Fresco, D. M., Heimberg, R. G., Abramowitz, A., & Bertram, T. L. (2006). The effect of a negative mood priming challenge on dysfunctional attitudes, explanatory style, and explanatory flexibility. *British Journal of Clinical Psychology,* 45, 167-183.

Goldberg, D. (1978). *Manual of the General Health Questionnaire*. Windsor: NFER Nelson Publishing Co.

Gotlib, I. H. (1984). Depression and general psychopathology in university students. *Journal of Abnormal Psychology,* 93, 19-30.

Haeffel, G. J., Abramson, L.Y., Voelz, Z. R., Metalsky, G. I., Halberstadt, L. Dykman, B. M. and et al.(2005). Negative cognitive styles, Dysfunctional attitudes, and the remitted depression paradigm: A search for the elusive cognitive vulnerability to depression factor among remitted depressives. *Emotion* ,5, 343-348.

Hamilton, E. W., & Abramson, L. Y. (1983). Cognitive patterns and major depressive disorders: A longitudinal study in a hospital setting. *Journal of Abnormal Psychology*, 92, 173–184.

Hammen, C. (1992). Cognitive, life stress, and interpersonal approaches to a developmental psychopathology model of depression. *Development and Psychopathology*, 4, 189-206.

Hankin, B. L., Abramson, L. Y., Miller, N., & Haeffel, G. J. (2004). Cognitive vulnerability-stress theories of depression: Examining affective specificity in the prediction of depression versus anxiety in three prospective studies. *Cognitive Therapy and Research*, 28, 309–345.

Hollon, S. D., & Kendall, P. C. (1980). Cognitive self statements in depression: Development of an automatic thoughts Questionnaire. *Cognitive Therapy and Research*, 4, 383–395.

Ilardi, S. S., & Craighead, W. E. (1999). The relationship between personality pathology and dysfunctional cognitions in previously depressed adults. *Journal of Abnormal Psychology,* 108, 51–57.

Imber, S. D., Pilkonis, P. A., Sotsky, S. M., Elkin, I., Watkins, J. T., Collins, J. F., & et al. (1990). Mode-specific effects among three treatments for depression. *Journal of Consulting and Clinical Psychology*, 58, 352–359.

Ingram, R. E., & Wisnicki, K. S. (1988). Assessment of positive automatic cognition. *Journal of Consulting and Clinical Psychology*, 56, 898 - 902.

Joiner, T. E., Metalsky, G. I., Lew, A., & Klocek, J. (1999). Testing the causal mediation component of Beck's theory of depression: Evidence for specific mediation. *Cognitive Therapy and Research*, 23, 401–412.

Jöreskog, K., & Sörbom, D. (1993). *LISREL 8: Structural equation modeling with the SIMPLIS command language*. Chicago: Scientific Software International.

Kauth, R. M., & Zettle, R. D. (1990). Validation of depression measures in adolescent populations. *Journal of clinical psychology*, 46, 291-295.

Klocek, J. W., Oliver, J. M., & Ross, M, J. (1997). The role of dysfunctional attitudes, negative life events, and social support in the prediction of depressive dysphoria: A prospective longitudinal study, *Social Behavior and Personality*, 25, 123-136.

Lewinsohn, P. M., Duncan, E. M., Stanton, A. K., & Hautzinger, M. (1986). Age at first onset for nonbipolar depression. *Journal of Abnormal Psychology*, 95, 378-383.

Lewinsohn, P. M., Rohde, P., Seeley, J. R., & Hops, H. (1991). Comorbidity of unipolar depression: I. Major depression with dysthymia. *Journal of Abnormal Psychology*, 100, 205-213.

Monirpoor, N., Yazdandoost, R., Atef vahid, M. K., Delavar, A., & Khosfi, H. (2004). Relationship of sociodemographic factors with the prevalence of depression in high school students. *Social Welfare Quarterly*, 14, 178-193.

Parker, G., Bradshaw, G., & Blinnault, I. (1984). Dysfunctional Attitudes: Measurement, significant constructs and links with depression. *Acta Psychiatrica Scandinavica*, 70, 90-96.

Power, M. J., Katz, R., McGuffin, D. C., Lam, D., Beck, A. T. (1994). The Dysfunctional Attitude Scale (DAS): A comparison of Forms A and B and proposals for a new subscaled version. *Journal of Research in Personality*, 28, 263-276.

Roberts, J. E., Gamble, S. A. (2001). Current mood-state and past depression as predictors of self-esteem and dysfunctional attitudes among adolescents. *Personality and Individual Differences*. 30, 1023 - 1037.

Sahin, N. H. & Sahin, N. (1992). How dysfunctional are the dysfunctional attitudes in another culture? *British Journal of Medical Psychology*, 65, 17-26.

Seligman, M. E. P., Schulman, P., DeRubeis, R. J., & Hollon, S. D. (1999).The prevention of depression and anxiety. Prevention & Treatment, 2 Article Retrieved July15, 2000, from *http://www.journals.apa.org/prevention/volume2/pre0020008a.html*

Shojaezadeh, D., & Rasafiani, H. (2000). The prevalence of depression in high school students in Kazeron. *Journal of Rehabilitation*. 29 - 32.

Talepasand, S. (1996). Validation of the Automatic Thoughts Questionnaire in high school students. Unpublished master dissertation.

Weissman, A. N., & Beck, A. T. (1978). *Development and Validation of the Dysfunctional Attitude Scale.* Paper presented at the Annual Meeting of the American Educational Research Association, Toronto, Canada.

Weissman, A. N. (1979). The Dysfunctional Attitudes Scale: A validation study. *Dissertation Abstracts International*, 40, 1389B-1390B.

Weissman, A. N. (1980). *Assessing Depressionogenic Attitudes*: *A validation study*. Paper presented at 51st Annual Meeting of the Eastern Psychological Association, Hartford, CT.

Whisman, M. A. (1993). Mediators and moderators of change in cognitive therapy of depression. *Psychological Bulletin*, 114, 248–265.

Whisman, M. A., & Friedman, M. A. (1998). Interpersonal problem behaviors associated with dysfunctional attitudes. *Cognitive Therapy and Research*, 22, 149-160.